

REMARKS:Status

Claims 1 to 8, 10, and 12 to 26 are pending. Claims 1, 4, 12, 21, 25 and 26 are the independent claims and have been amended. Claim 5 also has been amended to correct a minor informality. Reconsideration and further examination are respectfully requested.

Claim Rejections

Claims 1 to 8 and 10 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,026,448 (Goldrian) in view of U.S. Patent No. 6,658,469 (Massa). Claims 12 to 26 were rejected under § 103(a) over Goldrian in view of Massa and U.S. Patent No. 6,499,028 (Brock).

Discussion

The claims are discussed below, grouped according to independent claim.

Claims 1 to 3: Claim 1 is reproduced here as amended:

1. A method of sending data between a client and a server using at least one of plural data buffers of different sizes in said client and at least one of plural data buffers of different sizes in said server, comprising steps of:
 1. sending, from said client to said server, an address of a client data buffer located within said client, said address of said client data buffer for a data transfer responsive to a size of a data block to be transferred; and
 2. transferring said data block between said client and said server using said client data buffer and a server data buffer from among the plural data buffers in said client and the plural data buffers in said server, said client data buffer and said server data buffer matched to a size of data blocks to be transferred into or out of those data buffers.

The applied art is not seen to disclose or to suggest the foregoing features of claim 1, at least with respect to “said address of said client data buffer for a data transfer responsive to a size of a data block to be transferred” and “said client data buffer and said server data buffer matched to a size of data blocks to be transferred into or out of those data buffers.”

Claim 12 recited a feature along the lines that the address of the client data buffer is responsive to a size of a data block to be transferred. In the rejection of claim 12, Brock was cited as teaching this feature. However, Brock does not teach such.

In more detail, the Office Action apparently cited col. 3, lines 40 to 67, and col. 11, line 35, to col. 12, line 56, as teaching this feature. This text does teach that “the address boundaries of each memory block 144 may be algorithmically determined given the lower address boundary of region 500 and the block size such that a software routine in filter module 132 can associate a physical address extracted from interconnect 108 with a memory block 144.” However, these memory blocks are not client data buffers for a data transfer. Rather, “[e]ach memory block 144 corresponds to a contiguous portion of the physical address space 145 of computer system 100 that is being monitored.” Brock, col. 9, lines 42 to 44.

Furthermore, nothing in Brock indicates that the sizes of the memory blocks are related to a size of data blocks to be transferred. Rather, Brock teaches that “a base address and a range could be defined for each memory block 144 and stored in dedicated registers.” Brock teaches an alternative embodiment in which “the block size of each memory block 144 could be fixed.” Brock teaches a further embodiment in which “physical address space 145 is first divided, through software programming, into a relatively few number of randomly defined memory regions[, and the]

memory regions are then further divided into a selectable number of memory blocks 144 where each block in a given region has a fixed size, but where the block size of memory blocks 144 in different regions may differ.” Brock, col. 10, lines 8 to 49.

In none of these embodiments of Brock is a size of a memory block related to a size of data blocks to be transferred. Thus, even given that Brock’s address boundaries are algorithmically determined from memory block sizes, this still is not equivalent to the claimed feature that an address of a client data buffer for a data transfer is responsive to a size of a data block to be transferred.

Applicant now turns to the following feature of claim 1: “said client data buffer and said server data buffer matched to a size of data blocks to be transferred into or out of those data buffers.”

The Office Action acknowledged that Goldrian does not teach this feature. The Office Action indicated that Massa remedied this deficiency of Goldrian, stating that “Massa discloses the remote switch 126 of the server transfers an amount of data equal to the size of the receiving buffer 134 (client’s buffer) from the transmission buffer (server’s buffer) into the set of receiving buffers 134 (col. 12, lines 42-59).” The Office Action includes a similar statement in its Response to Arguments.

One of the claimed client and server data buffers are necessarily a send (i.e., transmission) data buffer. The Office Action does not even allege that the cited portions of Massa teach that a send data buffer is matched to a size of data blocks to be transferred. Instead, the Office Action notes that Massa teaches transferring “an amount of data equal to the size of the receive

buffer 134 (client's buffer) from the transmission buffer 138 (server's buffer) into the set of receiving buffers 134." Now, this language clearly indicates that the amount of data is equal to a size of the receive buffer. However, no such restriction is placed on the transmission buffer. The entirety of Massa likewise is silent as to placing such a restriction on the size of the transmission buffer. Thus, Massa does not teach claim 1's feature of "said client data buffer **and** said server data buffer matched to a size of data blocks to be transferred into or out of those data buffers" (emphasis added).

In view of the foregoing, claim 1 and its dependent claims are allowable over the applied art. Accordingly, withdrawal of the outstanding rejection and allowance of these claims are respectfully requested.

Claims 4 to 8 and 10: Claim 4 is reproduced here as amended:

4. A system including
a client and server;
a NUMA communication link coupled to said client and server; and
plural data buffers of different sizes in said client and plural data buffers of different sizes in said server for data transfers between said client and said server using said NUMA communication link;
wherein when data is transferred between said client and said server using said data buffers, an address of a client data buffer located within said client is sent from said client to said server, with said address of said client data buffer for a data transfer responsive to a size of a data block to be transferred, and said client data buffer and a server data buffer from among the plural data buffers are used to transfer said data block, with said client data buffer and said server data buffer matched to a size of said data block to be transferred into or out of those data buffers.

Substantially as discussed above with respect to claim 1, the applied art is not seen to disclose or to suggest the foregoing features of claim 4, at least with respect to "said address of said client data buffer for a data transfer responsive to a size of a data block to be transferred" and "said

client data buffer and said server data buffer matched to a size of data blocks to be transferred into or out of those data buffers.” Accordingly, claim 4 and its dependent claims are allowable over the applied art. Withdrawal of the outstanding rejection and allowance of these claims are therefore respectfully requested.

Claims 12 to 20: Claim 12 is reproduced here as amended:

12. A system including

a server, said server having a memory including a client communication region and a data transfer region, said data transfer region having plural data buffers of different sizes for data transfers to and from a client, at least some of said data buffers matched to different sizes of data blocks to be transferred into or out of those data buffers and matched to different sizes of data buffers in said client that are also matched to said different sizes of said data blocks to be transferred; and

a remote DMA communication link coupled to said data transfer region;

wherein said client communication region includes information regarding a data transfer into or out of said data transfer region; and

wherein an address of one or more of said server data buffers for said data transfer is selected for a data transfer responsive to a size of data blocks for said data transfer.

Substantially as discussed above with respect to claim 1, the applied art is not seen to disclose or to suggest the foregoing features of claim 12, at least with respect to “at least some of said data buffers matched to different sizes of data blocks to be transferred into or out of those data buffers and matched to different sizes of data buffers in said client that are also matched to said different sizes of said data blocks to be transferred” and “wherein an address of one or more of said server data buffers for said data transfer is selected for a data transfer responsive to a size of data blocks for said data transfer.” Accordingly, claim 12 and its dependent claims are allowable over the

applied art. Withdrawal of the outstanding rejection and allowance of these claims are therefore respectfully requested.

Claims 21 to 24: Claim 21 is reproduced here as amended:

21. A method including
communicating file system requests and responses between a client
and a file server;

 sending data between said client and said file server using a memory
 access operation involving at least one of plural data buffers of different sizes
 both in said client and in said file server, at least some of said data buffers
 both in said client and in said file server matched to sizes of data blocks to be
 transferred into or out of said data buffers, wherein selection of an address of
 one or more of said data buffers for a data transfer is responsive to
 information in said requests or said responses and is responsive to a size of
 data blocks for said memory access operation.

Substantially as discussed above with respect to claim 1, the applied art is not seen to disclose or to suggest the foregoing features of claim 21, at least with respect to “at least some of said data buffers both in said client and in said file server matched to sizes of data blocks to be transferred into or out of said data buffers” and “selection of an address of one or more of said data buffers for a data transfer ... is responsive to a size of data blocks for said memory access operation.” Accordingly, claim 21 and its dependent claims are allowable over the applied art. Withdrawal of the outstanding rejection and allowance of these claims are therefore respectfully requested.

Claim 25: Claim 25 is reproduced here as amended:

25. A method including
communicating database requests and responses between a client and
a database server;

 sending data between said client and said database server using a
 memory access operation involving at least one of plural data buffers of
 different sizes both in said client and in said database server, at least some of
 said data buffers both in said client and in said database server matched to

sizes of data blocks to be transferred into or out of said data buffers, wherein selection of an address for one or more of said data buffers for a data transfer is responsive to information in said requests or said responses and is responsive to a size of data blocks for said memory access operation.

Substantially as discussed above with respect to claim 1, the applied art is not seen to disclose or to suggest the foregoing features of claim 25, at least with respect to “at least some of said data buffers both in said client and in said file server matched to sizes of data blocks to be transferred into or out of said data buffers” and “selection of an address of one or more of said data buffers for a data transfer … is responsive to a size of data blocks for said memory access operation.” Accordingly, claim 25 is allowable over the applied art. Withdrawal of the outstanding rejection and allowance of this claim are therefore respectfully requested.

Claim 26: Claim 26 is reproduced here as amended:

26. A method including
communicating requests and responses between a client and a server;
sending data between said client and said server using a memory
access operation involving at least one of plural data buffers of different sizes
both in said client and in said server, at least some of said data buffers both in
said client and in said server matched to sizes of data blocks to be transferred
into or out of said data buffers, wherein selection of an address for one or
more of said data buffers for a data transfer is responsive to information in
said requests or said responses and is responsive to a size of data blocks for
said memory access operation.

Substantially as discussed above with respect to claim 1, the applied art is not seen to disclose or to suggest the foregoing features of claim 26, at least with respect to “at least some of said data buffers both in said client and in said file server matched to sizes of data blocks to be transferred into or out of said data buffers” and “selection of an address of one or more of said data buffers for a data transfer … is responsive to a size of data blocks for said memory access operation.”

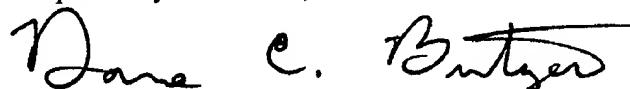
Accordingly, claim 26 is allowable over the applied art. Withdrawal of the outstanding rejection and allowance of this claim are therefore respectfully requested.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney can be reached at (614) 486-3585. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,



Dane C. Butzer
Reg. No. 43,521

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Swernofsky Law Group PC
P.O. Box 390013
Mountain View, CA 94039-0013
(650) 947-0700